Indiana Department of Environmental Management
Office of Water Quality
Rule Fact Sheet

August 14, 2002

DEVELOPMENT OF NEW RULES AND AMENDMENTS TO RULES CONCERNING DRINKING WATER STANDARDS, SPECIFICALLY CONCERNING INTERIM ENHANCED SURFACE WATER TREATMENT, DISINFECTANTS AND DISINFECTION BYPRODUCTS, AND FILTER BACKWASH RECYCLING FOR PUBLIC DRINKING WATER SYSTEMS

#01-348 (WPCB)

Overview

The Indiana Department of Environmental Management (IDEM) has developed new rules and amendments to rules to be presented to the Water Pollution Control Board on August 14, 2002, for consideration of preliminary adoption concerning Interim Enhanced Surface Water Treatment, Disinfectants and Disinfection Byproducts, and Filter Backwash for Public Drinking Water Systems. This rulemaking also repeals 327 IAC 8-2-6, 327 IAC 8-2-6.1, and 327 IAC 8-2-29.

Citations Affected

This rulemaking adds new rules 327 IAC 8-2.5 and 327 IAC 8-2.6 and new section 327 IAC 8-2-48; amends 327 IAC 8-2-1, 327 IAC 8-2-5, 327 IAC 8-2-5.3, 327 IAC 8-2-8.5, 327 IAC 8-2-13, 327 IAC 8-2-30, 327 IAC 8-2-31, 327 IAC 8-2.1-3, 327 IAC 8-2.1-4, 327 IAC 8-2.1-6, 327 IAC 8-2.1-8, 327 IAC 8-2.1-16, and 327 IAC 8-2.1-17; and repeals 327 IAC 8-2-6, 327 IAC 8-2-6.1, and 327 IAC 8-2-29.

Affected Persons

This rulemaking where it regards the federal interim enhanced surface water treatment rule will apply to public water systems that use surface water or ground water under the direct influence of surface water (GWUDI) and serve a population of ten thousand (10,000) or more. Requirements amended or added into state drinking water rules from the federal disinfectants and disinfection byproducts rule apply to all community and nontransient noncommunity water systems that treat water with a chemical disinfectant for either primary or residual treatment. Entities potentially regulated by the requirements amended or added into state drinking water rules from the federal filter backwash recycling rule are public water systems that use surface water or GWUDI, practice conventional or direct filtration, and recycle spent filter backwash, thickener supernatant, or liquids from dewatering processes.

Reason(s) for the Rule

This rulemaking will make amendments to 327 IAC 8-2 and 327 IAC 8-2.1, Indiana's drinking water standards, and add new rules 327 IAC 8-2.5 and 327 IAC 8-2.6 to reflect recent changes made to federal regulations.

On December 16, 1998, U.S. EPA published National Drinking Water Regulations for Interim Enhanced Surface Water Treatment. These regulations make changes to the Indiana surface water treatment rule as published April 12, 1993. These changes are being made to improve implementation of the rule. The intended effect of the rule is to strengthen microbial protection, including provisions specifically to address *Cryptosporidium* and to address risk trade-offs with disinfection byproducts.

Also on December 16, 1998, U.S. EPA published National Drinking Water Regulations for Disinfectants and Disinfection Byproducts. These regulations update the 1979 regulations for total trihalomethanes. In addition, these regulations will reduce exposure to three disinfectants (chlorine, chloramine, and chlorine dioxide) and many disinfection byproducts.

On June 8, 2001, U.S. EPA published National Drinking Water Regulations for Filter Backwash Recycling. These regulations address a statutory requirement of the 1996 Safe Drinking Water Act (SDWA) Amendments to promulgate a regulation which "governs" the recycling of filter backwash water within the treatment process of public water systems. The purpose of these regulations is to further protect public health by requiring public water systems, where needed, to institute changes to the return of recycle flows to plant's treatment process that may otherwise compromise microbial control. Indiana is required to adopt all of these federal revisions in order to maintain primacy (primary enforcement authority) for the Safe Drinking Water Program.

Economic Impact of the Rule

These federally-mandated rule changes will create costs for public water systems and their customers. As well, there will be costs for the state regulatory agency to implement the new and amended rule requirements. However, in every instance, EPA estimates that the benefits of increased human health protection outweigh the costs of the rule changes.

The interim enhanced surface water treatment rule has a total annualized national cost estimated by EPA to be three hundred seven million dollars ($307 M). The rule requirements will result in increased costs to public water systems for improved turbidity treatment, monitoring, disinfection benchmarking, and covering new finished water reservoirs, as well as state implementation costs. EPA estimates that ninety-two percent of households will incur an increased water bill of less than one dollar per month and less than one percent of households will incur an increase of between five and eight dollars per month.

The total annualized national cost estimated by EPA for the disinfectants and disinfection byproducts rule is about seven hundred million dollars ($700 M). EPA estimates that ninety-five percent of households will incur an increased water bill of one dollar per month and one percent of households are expected to incur increased water bills of ten to thirty-three dollars per month if their public water supplier chooses to install treatment. Many of these systems may choose less costly non-treatment options such as consolidation. The majority of households incurring the highest costs are served by small public water systems that have never been regulated for disinfection byproducts.

EPA estimates the annualized cost for the filter backwash recycling rule at either five and eight tenths million dollars ($5.8 M) or seven and two tenths million dollars ($7.2 M) in 2000 dollars depending on whether a three percent or a seven percent discount rate is used to annualize capital and start-up costs. The cost estimate includes capital costs for treatment changes and start-up and annual labor costs for reporting activities. The total annual cost per household is estimated to be less than one dollar seventy cents ($1.70) for ninety-nine percent of the nearly thirty-one and a half million households potentially affected by the filter backwash recycling rule. The remaining one percent of households will experience a range of costs between one dollar and seventy cents ($1.70) and one hundred dollars per year. Only three hundred twenty-one (321) of the nearly thirty and a half million households potentially affected by the filter backwash recycling rule are expected to incur costs of approximately one hundred dollars per year. The costs associated with not instituting these rule changes can also be expensive such as when an outbreak of pathogen caused illness results from disinfection resistant pathogens not being removed through filtration from finished water. During an outbreak of pathogen caused illness, local governments and water systems must issue warnings and alerts and may need to provide an alternative source of water. Public water systems also face negative publicity and possibly legal costs. Businesses have to supply their customers and employees with alternative sources of water and some, especially restaurants, may even have to temporarily close. Households also have to either boil their water, purchase water, or obtain water from another source.

Benefits of the Rule

Protection of human health is the fundamental benefit of these rule changes, and this rulemaking will allow IDEM regulations to remain as stringent as the EPA regulations so that IDEM may maintain primacy ("primary enforcement authority") for the affected regulations. In 1993, *Cryptosporidium*, a microbial pathogen, caused four hundred thousand (400,000) people in Milwaukee to experience intestinal illness of which more than four thousand (4,000) were hospitalized, and at least fifty (50) deaths have been attributed to the infection. There

have also been cryptosporidiosis outbreaks in Nevada, Oregon, and Georgia over the past several years. Disinfectants are effective in controlling many microorganisms, such as historically stopping the transmission of typhoid and cholera through public water supplies, but they react with natural organic and inorganic matter in source water and distribution systems to form disinfection byproducts which themselves have been shown to be carcinogenic or cause adverse reproductive or developmental effects in laboratory animals. The federal disinfectants and disinfection byproducts rule was developed to balance the risks between microbial pathogens and disinfection byproducts.

Description of the Rulemaking Project

This rulemaking was initiated with publication of first notice of comment period in the Indiana Register on October 1, 2001. The second notice of comment period including draft rule language was published on June 1, 2002. IDEM received several comments to the draft rule language but no comments to the first notice of public comment period.

Scheduled Hearings

First Public Hearing: August 14, 2002, at the WPCB meeting held at the Ivy Tech Auditorium.

Consideration of Factors Outlined in Indiana Code 13-14-8-4

Indiana Code 13-14-8-4 requires that in adopting rules and establishing standards, the board shall take into account the following:

1) All existing physical conditions and the character of the area affected.

2) Past, present, and probable future uses of the area, including the character of the uses of surrounding areas.

3) Zoning classifications.

4) The nature of the existing air quality or existing water quality, as appropriate.

5) Technical feasibility, including the quality conditions that could be reasonably be achieved through coordinated control of all factors affecting the quality.

6) Economic reasonableness of measuring or reducing any particular type of pollution.

(7) The right of all persons to an environment sufficiently uncontaminated as not to be injurious to:

(A) human, plant animal, or aquatic life; or

(B) the reasonable enjoyment of life and property.

Rulemaking Process

The first step in the rulemaking process is a first notice published in the Indiana Register. This includes a discussion of issues and opens a first comment period. The second notice is then published which contains the comments and the department's responses from the first comment period, a notice of first meeting/hearing, and the draft rule. The Water Pollution Control Board holds the first meeting/hearing and public comments are heard. The proposed rule is published in the Indiana Register after preliminary adoption along with a notice of second meeting/ hearing. If the proposed rule is substantively different from the draft rule, a third comment period is required. The second public meeting/hearing is held and public comments are heard. Once final adoption occurs, the rule becomes effective 30 days after filing with the Secretary of State.

IDEM Contact

Additional information regarding this rulemaking action can be obtained from Megan Wallace, Rules Section, Office of Water Quality, (317) 233-8669 or (800) 451-6027 (in Indiana).